

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A Fresnel lens comprising a substantially square polygonal focusing portion adapted to focus solar radiation to a square polygonal area.
2. (Original) The lens of claim 1, wherein the Fresnel lens comprises a plastic injection molded lens which is adapted to be interlocked or snap fitted onto a backing structure adapted to support a photovoltaic cell.
3. (Currently Amended) A kit for forming a solar module, comprising:
~~a Fresnel lens comprising a substantially polygonal focusing portion adapted to focus solar radiation to a polygonal area; and~~
a first means for supporting a photovoltaic cell inside a building façade envelope at a predetermined distance from the Fresnel lens such that the solar radiation is focused onto the photovoltaic cell.
4. (Original) The kit of claim 3, wherein the first means comprises a back support structure which has a first cross sectional area at a first portion adapted to be connected to the Fresnel lens and a second cross sectional area smaller than the first cross sectional area at a second portion adapted to support the photovoltaic cell.
5. (Original) The kit of claim 4, wherein the back support structure comprises a substantially pyramidal or a substantially conical support structure comprising a translucent, a diffusing or a Fresnel diverging material.
6. (Original) The kit of claim 4, wherein the back support structure comprises a diffusing material which is shaped to block the focused solar radiation from being visible from a back side of the back support structure, and wherein the back side of the back support structure faces away from the Fresnel lens.

7. (Original) The kit of claim 4, wherein the back support structure comprises a substantially pyramidal or a substantially conical arrangement of wires or rods that are adapted to be interlocked or snap fitted onto the Fresnel lens and which contains connecting members adapted to support the photovoltaic cell.

8. (Original) The kit of claim 4, wherein the Fresnel lens has an area of 0.2 m^2 or less, the second area of the support structure comprises an area of 2 cm^2 or less and a length of the support structure from the first area to the second area is 30 cm or less.

9. (Currently Amended) A solar module, comprising:

a Fresnel lens ~~comprising a substantially polygonal focusing portion adapted to focus solar radiation to a polygonal area; and~~

a back support structure adapted to support a photovoltaic cell at a predetermined distance from the Fresnel lens such that solar radiation is focused onto the photovoltaic cell;

wherein:

the back support structure has first portion connected to the Fresnel lens and a second portion adapted to support the photovoltaic cell; and

the first portion of the back support structure has a first cross sectional area and a second portion of the back support structure has a second cross sectional area smaller than the first area; and

the Fresnel lens has an area of 0.2 m^2 or less, the second cross sectional area of the support structure comprises an area of 2 cm^2 or less, the length of the support structure from the first area to the second area is 30 cm or less, such that the solar module is adapted to be located inside a building façade envelope.

10. (Original) The module of claim 9, further comprising the photovoltaic cell connected to the second portion of the back support structure.

11. (Original) The module of claim 10, wherein the back support structure comprises a substantially pyramidal or a substantially conical support structure comprising a translucent, a diffusing or a Fresnel diverging material.

12. (Original) The module of claim 11, wherein the back support structure comprises a diffusing material which is shaped to block the focused solar radiation from being visible from a back side of the support structure, and wherein the back side of the back support structure faces away from the Fresnel lens.

13. (Original) The module of claim 10, wherein the back support structure comprises a substantially pyramidal or a substantially conical arrangement of wires or rods that are interlocked or snap fitted onto the Fresnel lens and which contain connecting members which support the photovoltaic cell.

14. (Original) The module of claim 10, where in the photovoltaic cell comprises a polygonal cell which is mounted at a distance from the Fresnel lens so that a size of an area of solar radiation focused by the Fresnel less substantially matches a size of the photovoltaic cell radiation receiving area.

15. (Currently Amended) The module of claim 10, wherein the Fresnel lens has an area of 0.09 to 0.2 m² or less, the second cross sectional area of the support structure comprises an area of [[2]] 0.5 to 1.5 cm² or less, the length of the support structure from the first area to the second area is 10 to 20 cm 30-cm or less and the photovoltaic cell radiation receiving area is 1.5 cm² or less.

16. (Currently Amended) The module of claim 10, further comprising:
a focusing lens located between the Fresnel lens and the photovoltaic cell; and
a heat sink connected to the second portion of the back support structure, such that the photovoltaic cell is mounted in contact with the heat sink photovoltaic cell.

17. (Original) The module of claim 16, wherein:
the heat sink is selected from a group consisting of radiative type heat sinks, cooling fluid type heat sinks, passive cooling type heat sinks and heat-pipe type heat sinks; and
the photovoltaic cell is selected from a group consisting of III-V semiconductor solar cells and vertical multijunction (VMJ) solar cells.

18. (Original) The module of claim 16, wherein:

the Fresnel lens is interlocked or snap fitted to the first portion of the back support structure; and

the heat sink is interlocked or snap fitted to the second portion of the back support structure.

19. (Original) The module of claim 18, wherein the photovoltaic cell is attached to the heat sink.

20. (Original) The module of claim 10, further comprising at least one air gap between the Fresnel lens and the back support structure.

Claims 21-48 (Cancelled).

49. (New) The kit of claim 3, wherein the Fresnel lens comprises a substantially polygonal focusing portion adapted to focus solar radiation to a polygonal area.

50. (New) The module of claim 9, wherein the Fresnel lens comprises a substantially polygonal focusing portion adapted to focus solar radiation to a polygonal area.

51. (New) The module of claim 15, wherein the photovoltaic cell converts at least 15% of captured solar energy to electricity.

52. (New) The module of claim 51, wherein the photovoltaic cell converts 15% to 50% of captured solar energy to electricity.

53. (New) A solar module, comprising:

a Fresnel lens; and

a back support structure adapted to support a photovoltaic cell at a predetermined distance from the Fresnel lens such that solar radiation is focused onto the photovoltaic cell;

wherein:

the back support structure has first portion connected to the Fresnel lens and a second portion adapted to support the photovoltaic cell;

the first portion of the back support structure has a first cross sectional area and a second portion of the back support structure has a second cross sectional area smaller than the first area;

the solar module has a size such that it is adapted to be located inside a building façade envelope; and

the back support structure has a substantially pyramidal or a substantially conical shape.

54. (New) The module of claim 53, wherein the back support structure comprises a substantially pyramidal or a substantially conical arrangement of wires or rods that are interlocked or snap fitted onto the Fresnel lens and which contain connecting members which support the photovoltaic cell.

55. (New) The module of claim 53, further comprising the photovoltaic cell connected to the second portion of the back support structure.

56. (New) The module of claim 53, wherein the Fresnel lens comprises a substantially polygonal focusing portion adapted to focus solar radiation to a polygonal area.